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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,113	03/16/2004	Satoshi Seo	12732-220001 / US7048	9191
26171	7590	12/20/2007		
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER GARRETT, DAWN L	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 12/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/801,113

**Applicant(s)**

SEO ET AL.

**Examiner**

Dawn Garrett

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

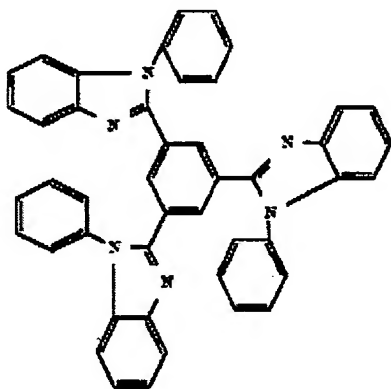
1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 29, 2007 has been entered.
2. Applicant previously elected the species of claim 4 which includes a host material according to formula (7) wherein an aryl group represents each of R1 to R3 and formula 8 wherein a lower alkyl group represents R1, R4, and R5 and a hydrogen atom represents each of R2 and R3. Claims 5-8 are withdrawn as non-elected. Claims 1-4 and 9-28 are under consideration.
3. The rejection of claims 1-4 and 9-24 under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US 2002/0055014 A1) in view of Xie (US 2003/0215667 A1) is withdrawn.
4. The rejection of claims 25-28 under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (US 2002/0055014 A1) in view of Xie (US 2003/0215667 A1) and Kawami et al. (US 5,929,561) is withdrawn.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

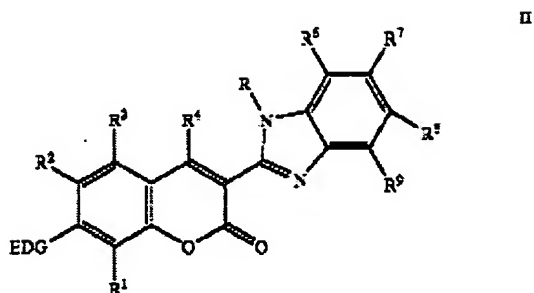
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 10-14, and 16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (US 5,645,948) in view of Xie et al. (US 2003/0215667 A1). Shi et al. describes organic electroluminescent devices comprising a host material for the luminescent layer according to the elected host species:



(see col. 8, lines 1-13, columns 11 and 12, bottom of page).

Dopants for the luminescent layer include coumarin derivatives (see col. 7, lines 61-65). Shi et al. is silent with respect to the *specific* coumarin derivative according to the elected guest material species. Xie teaches, in analogous art, coumarin derivatives useful as dopants in the luminescent layer of an electroluminescent device (see abstract). Xie teaches the species of coumarin derivative currently under consideration:



[0026] Wherein R is hydrogen, alkyl of from 1-24 carbon atoms, aryl, heteroaryl or carbocyclic systems;

[0027]  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  are individually alkyl of from 1 to 20 carbon atoms, aryl or carbocyclic systems;

[0028] EDG is hydrogen, alkyl group of from 1-24 carbon atoms, aryl group of from 5-24 carbon atoms, or electron donating groups, more typically are:



[0029] Wherein:  $R^{10}$ ,  $R^{11}$  and  $R^{12}$  are individually alkyl of from 1 to 20 carbon atoms, aryl or carbocyclic systems;  $R^{11}$  and  $R^1$ ,  $R^{11}$  and  $R^{12}$ , and  $R^{12}$  and  $R^2$  taken together can form ring systems, such as piperidine, julolidine, or tetramethyljulolidine.

(see page 2, par. 25-29).

It would have been obvious to one of ordinary skill in the art to have selected the coumarin derivative according to Xie for the Shi et al. device, because Shi et al. teaches coumarin derivatives are desired as dopant (guest) material for incorporation into the light emitting layer.

With regard to claims 10 and 11, the positive electrode (anode) may be formed of a number of materials including indium tin oxide (see col. 26, lines 35-44). With regard to claims 12-14, the negative electrode (cathode) may be formed of the required metals such as Mg:Ag (see col. 26, lines 49-57 and cathodes in Examples). ITO (indium tin

oxide) is transparent per claim 16. An electron transporting layer may be included per claims 18 and 23 (see col. 25, lines 21-65). A hole injecting layer may be included per claims 19 and 24 (see col. 4, lines 29-36). With regard to claim 20, an *electron transporting* layer inherently has the function of *blocking holes* (see col. 25, lines 21-65).

7. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (US 5,645,948) in view of Xie et al. (US 2003/0215667 A1) in further view of Okada et al. (US 2002/0055014 A1). Shi and Xie are relied upon as set forth above. Shi is silent with respect to the how the device is incorporated into an apparatus and the thickness of the anode for the device. Okada teaches, in analogous art, with respect to claim 9, devices are used for displays and displays are notoriously well known to be part of image reproduction devices, goggle type displays, cameras, and cellular phones (see Okada par. 5). Regarding the appropriate thickness for an anode and cathode of a device, Okada teaches in analogous art the formation of electrodes may be in a thickness of 10 nm (see par. 218 and 222). It would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated the Shi devices into a display and to have formed the electrodes (anode and cathode) in a thickness according to the teachings of Okada, because one would expect the devices to be useful in a display and to function with a conventional thickness for electrodes with a predictable result as a functional light emitting device.

8. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi et al. (US 5,645,948) in view of Xie et al. (US 2003/0215667 A1) in further view of Kawami et al. (US 5,929,561). Shi and Xie are relied upon as set forth above, but fail to

mention specifically that the light emitting devices may be used as pixels for a display device. Kawami et al. teaches in analogous art it is well known that an electroluminescent element may be incorporated as pixels in various display devices (see col. 1, lines 14-29). It would have been obvious for one of ordinary skill in the art at the time of the invention to have incorporated the devices rendered obvious by Shi in view of Xie as a pixel portion in a display, because Kawami et al. teaches it is well known that devices are used as pixels in various displays.

### ***Response to Arguments***

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dawn Garrett/

Dawn Garrett  
Primary Examiner  
Art Unit 1794